WHAT IS CLAIMED IS:

1. A system for remotely accessing storage devices across a network, the system comprising:

at least one storage device configured to store and retrieve information based upon instructions issued in accordance with a first instruction set; and

a networked storage controller configured to issue instructions to the at least one storage device in accordance with the first instruction set, the storage controller further configured to receive network communications containing embedded instructions in a second instruction set corresponding to storage and retrieval requests from at least one network device, wherein the networked storage controller is configured with a hardware-based acceleration module used for processing common case network communications relating to storage and retrieval requests in the second instruction set that are translated into instructions in the first instruction set and subsequently issued to the at least one storage device, and a software-based module used for processing non-common case network communications including exceptions and errors in network communications.

2. The system of Claim 1 wherein, the first instruction set comprises a small computer system interface (SCSI) instruction set.

3. The system of Claim 1 wherein, the second instruction set comprises an Internet Small Computer System Interface (iSCSI) instruction set.

4. The system of Claim 1 wherein, the network communications comprise TCP communications.

5. The system of Claim 1 wherein, the software-based module resolves the non-common case network communications transforming at least a portion thereof into common case network communications.

6. The system of Claim 5 wherein, the software-based module is coupled with the hardware-based acceleration module such that transformed common case network communications are forwarded to the hardware-based acceleration module.

7. The system of Claim 6 wherein, coupling between the software-based module and the hardware-based acceleration module improves the overall processing throughput of network communications by the networked storage controller.

8. The system of Claim 1 wherein, common case network communications comprise network communications during steady-state operation of a TCP connection.

9. The system of Claim 8 wherein, the steady state operation of a TCP connection comprises a substantially uninterrupted period of in-sequence network packet reception.

10. The system of Claim 8 wherein, the steady state operation of a TCP connection comprises a substantially error free period of network packet reception.

11. The system of Claim 8 wherein the steady state operation of a TCP connection comprises a period of packet reception wherein substantially no out-of-sequence network packets are received.

12. A system for Internet Small Computer System Interface (iSCSI) command resolution and processing over a TCP/IP network, the system comprising:

a host device configured to receive network data requests from at least one remotely located client device;

at least one storage device associated with the host device and configured to store and retrieve information according to a Small Computer System Interface (SCSI) instruction set; and

a controller comprising,

a storage network processor configured with a hardware accelerator module to process TCP/IP network traffic received from the client device containing iSCSI instructions and data, the storage network processor further configured to transform the iSCSI instructions into SCSI instructions to be issued to the at least one storage device;

a memory area for buffering data to be subsequently transferred between the host device and the at least one storage device;

a storage device interface used for transmitting and receiving data and SCSI instructions between the controller and the at least one storage device; and

a network device interface configured to communicate with the at least one remotely located client device and used for transmitting and receiving data and iSCSI instructions.

13. The system of Claim 12 further comprising, a remote memory channel used to transfer data and meta-data to a partner controller to provide at least a degree of fault tolerance.

14. The system of Claim 13 wherein storage data may be re-created on the partner storage controller.

15. A system for high data rate access to a storage device over a network, the system comprising:

an initiator device configured to transmit network storage and retrieval requests using an Internet Small Computer System Interface (iSCSI) protocol; and

a target device configured to receive network storage and retrieval requests in the iSCSI protocol which are forwarded to a storage network processor associated with the target device, the storage network processor configured with a hardware-accelerated protocol processing module used to transform the iSCSI protocol requests into Small Computer System Interface (SCSI) protocol requests that are subsequently forwarded to the storage device for further processing and execution.

16. The system of Claim 15 wherein, the hardware-accelerated protocol processing module rapidly processes common case network storage and retrieval requests to thereby achieve improved processing efficiency.

17. The system of Claim 15 wherein, the data rate of the storage network processor is approximately 10 Gigabits/sec.

18. The system of Claim 15 wherein, the hardware-accelerated protocol processing module performs a header processing function to parse the network storage and retrieval requests and deposits associated data into a main memory component.

19. The system of Claim 15 further comprising, a hardware-accelerated transmit module configured to accelerate creation of packet headers, data gathering, and transmission of network storage and retrieval requests.

20. The system of Claim 15 further comprising, a memory structure accelerator module configured to accelerates queue and stack access operations associated with network storage and retrieval request processing.

21. A system for accelerated TCP and iSCSI protocol processing, the system comprising:

a storage network processor (SNP) configured to offload at least some packet processing tasks from a general purpose processor associated with a host device, the storage network processor further comprising:

a hardware-accelerated receive module configured to receive TCP network packets;

a hardware-accelerated TCP protocol processing module configured to process common case TCP network packets to resolve embedded iSCSI instructions; and

a hardware-accelerated transmit module configured to transmit TCP network packets.

22. The system of Claim 21 wherein, offloading of the packet processing tasks occurs at several layers associated with a TCP protocol stack including an IP layer and a TCP layer.

23. The system of Claim 21 wherein, offloading of the packet processing tasks occurs at an iSCSI layer associated with an iSCSI protocol stack.

24. The system of Claim 21 wherein, the packet processing tasks comprise packet parsing operations.

25. The system of Claim 24 wherein, the packet parsing operations are directed towards resolving and processing the embedded iSCSI instructions.

26. The system of Claim 21 wherein, the storage network processor accelerates packet parsing operation to accommodate near line-rate receiving and transmission of TCP network packets.

27. The system of Claim 26 wherein, the line rate is approximately 10 Gigabit/sec.

28. The system of Claim 21 wherein, the storage network processor is configured to offload protocol processing associated with acknowledgement generation.

29. The system of Claim 21 wherein, the storage network processor is configured to offload protocol processing associated with window management.

30. The system of Claim 21 wherein, the storage network processor is configured to offload protocol processing associated with timer maintenance.

31. The system of Claim 21 wherein, the storage network processor is configured to accelerate protocol processing associated with acknowledgement generation.

32. The system of Claim 21 wherein, the storage network processor is configured to accelerate protocol processing associated with window management.

33. The system of Claim 21 wherein, the storage network processor is configured to accelerate protocol processing associated with timer maintenance.

34. The system of Claim 21 wherein, the storage network processor is configured to accelerate protocol processing associated with window management.

35. The system of Claim 21 wherein, the storage network processor is configured to accelerate protocol processing associated with retransmission.

36. The system of Claim 21 further comprising, a remote memory channel used to transfer data and meta-data to a partner storage controller to provide at least a degree of fault tolerance.

37. The system of Claim 36 wherein storage data may be re-created on the partner storage controller.